

4.5 HYDROLOGY AND WATER QUALITY

4.5.1 Setting

a. Countywide Hydrology. Several major watercourses are located throughout the County including, but not limited to: the Salinas River, Estrella River, Huerhuero Creek, Santa Rosa Creek, Morro Creek, San Luis Obispo Creek, Arroyo Grande Creek, Nipomo Creek, Chorro Creek and their tributaries. Rural areas as well as a significant amount of urban development surround these and other watercourses throughout the County.

The San Luis Obispo Creek and Arroyo Grande Creek watersheds are the most heavily urbanized areas within the County. During flood events, these watercourses can carry large amounts of debris and have the potential to cause significant property damage within the urbanized areas of the San Luis Bay (Coastal and Inland), San Luis Obispo, and Huasna-Lopez planning areas. Arroyo Grande Creek flood storage south of the City of Arroyo Grande has reached nearly 85% capacity due to heavy siltation caused by surrounding development. Santa Rosa Creek is a steep gradient creek that has a history of flooding the community of Cambria. The Salinas River, although adjacent to several communities, is generally contained within its river channel during storm events.

b. Drainage Problems and Generalized Flood Hazards. Development adjacent to or near surface water is subject to specific design and construction conditions to ensure a project's surface water is adequately contained and directed offsite. Drainage problems exist in localized areas of the County due to site topography, soil conditions, and adjacent development. The County Public Works Department has recently completed drainage studies for specific known problem areas of the County. As a result, the County Board of Supervisors approved funding for Drainage and Flood Control Studies for the communities of Cambria, Cayucos, Nipomo, Oceano, San Miguel, and Santa Margarita. A brief discussion of the community-specific drainage problems is provided below, which have been extracted from the Executive Summaries of the individual community drainage reports. The complete drainage study reports are available for review on the County Public Works website at <http://www.slocountydrainagestudies.org>.

Cambria. The combination of steep topography, lack of drainage facilities, and the location of residential parcels below 100-year flood elevations has resulted in localized poor drainage and/or flooding around some residences, buildings, and roadways in Cambria. The magnitude of flooding varies by the districts in Cambria and by location within each district. Drainage from a number of uphill lots flows along the edge of street pavement and drains into lots of lower elevation, creating flooding and erosion problems. Drainage problems also exist where curbs are present, although topography creates conditions where lots adjacent to the roadway are much lower than the roadway surface. Many unpaved roads are also subject to sheet and rill erosion during storm events.

Cayucos. The combination of inadequate drainage facilities, steep slopes, and structures located below street grade has resulted in localized drainage problems in Cayucos. The most serious flooding in the community takes place in the floodplain of Cayucos Creek west of State Route (SR) 1, which is bounded by a mobile home park on the north and Cayucos Drive on the south. Extensive flooding occurs due to flows from the creek



overtopping the banks, and the inability of the local drainage to enter the creek due to high water levels. A number of nuisance drainage and flooding problems occur throughout Cayucos due to topography and the lack of a consistent, organized network of drainage facilities within the community. Drainage from a number of uphill lots flows along the edge of street pavement and drains into lots of lower elevation, creating flooding and erosion problems.

Oceano. Existing flood control facilities in Oceano are limited. In Oceano's early stages of urbanization, stormwater conveyance and flood control infrastructure were not incorporated into the community because the high infiltration rate of the underlying sands was sufficient to naturally dispose of runoff. With an increase in urbanization and associated impervious surfaces, the capability of the underlying soil to adequately absorb urban runoff decreased. This has resulted in several areas becoming flood prone, causing public and private property damage during larger storm events. The combination of the area's geology, shallow topography, construction within natural drainage courses without provisions for rerouting surface drainage, and inadequate drainage facilities has resulted in localized poor drainage and/or flooding around some residences, buildings, and roadways. The most serious flooding in the community takes place along SR 1. Extensive ponding can occur for several days after significant rainfall, particularly at the intersection of 17th and 19th Streets with SR 1 and the intersection of 13th Street and Paso Robles Street with SR 1. This problem is generally caused by relatively flat topography and lack of capacity in the drainage facilities to convey runoff south towards Arroyo Grande Creek.

San Miguel. The community of San Miguel lacks a formal drainage system. Local runoff generally follows the gentle northeasterly slope of the community and either flows to the Salinas River or infiltrates into the flood plain. Low spots or depressions cause frequent ponding and shallow flooding at several locations. Localized flooding is particularly extensive along Mission Street and N Street between 11th and 14th Streets, and north of 14th Street between Mission and N Streets. Caltrans culverts convey stormwater onto road surfaces of 10th Street, 12th Street, 14th Street and 16th Street from the undeveloped area and possibly developed portions of U.S. Highway 101.

The primary cause of flooding in San Miguel is the absence of a continuous positive slope and drainage conveyance path from L Street to the Salinas River. The railroad serves as a barrier to storm runoff flowing from west of Mission Street to the Salinas River. In addition, the absence of a continuous curb and gutter system has lead to the concentration of street runoff in areas that do not have curbs or gutters and generally represent low spots within a neighborhood block. The most serious flooding in the community takes place along the western side of the railroad since runoff from residential neighborhoods collects in this area. The overall drainage issues identified in San Miguel include:

- Ponding of stormwater west of the Union Pacific Railroad tracks, and the subsequent flooding in the vicinity of Mission Street between 11th and 16th Streets;
- Continued flooding and drainage problems in some residential areas;
- Drainage from U.S. 101.

Santa Margarita. Several factors contribute to flooding problems in Santa Margarita: inadequate channel and bridge capacities; development-restricted floodplain; lack of flood



protected homes; inadequate local drainage facilities; and high peak runoff. There are two categories of flooding in Santa Margarita: major creek flooding, and localized street and property flooding. The major flooding problems in Santa Margarita are caused by a combination of inadequate culverts and bridges and inadequate channel capacity in Yerba Buena Creek. When the creek's flow exceeds the capacity of the channel and bridge/culvert crossings, water overtops the banks and floods adjacent low topographic areas of Santa Margarita. The second category of flooding, localized street and nuisance flooding, is caused by insufficient capacity in the local drainage ditches, driveway culverts, and storm drains. These facilities are often under-maintained and filled with sediment or other debris, thereby preventing adequate conveyance to Yerba Buena and Santa Margarita Creeks.

c. FEMA Floodplains. Flood Insurance Rate Maps divide flood areas into three zones: Zone A for areas of 100-year flood, base flood elevations not determined; Zone B for areas of 500-year flood; and Zone C for areas of minimal flooding. The National Flood Insurance Program 100-year floodplain is considered to be the base flood condition. This is defined as a flood event of a magnitude that would be equaled or exceeded an average of once during a 100-year period. Floodways are defined as stream channels plus adjacent floodplains that must be kept free of encroachment as much as possible so that 100-year floods can be carried without substantial increases (no more than one foot) in flood elevations.

d. Water Quality. The issue of surface water quality in the County is important because of the habitat value of the County's creeks and tributaries, including habitat for several endangered or threatened plant and animal species. Surface water entering watercourses from undeveloped areas usually travels over vegetative cover, resulting in little erosion or sedimentation. Urbanized areas typically contain pollutants on the ground surface that are harmful to water quality and natural ecosystems. These include heavy metals, hydrocarbons, detergents, fertilizers, and pesticides that originate from vehicle use and commercial and residential land use activities. For the most part, these pollutants are associated with sediments that collect on roadways and are flushed into the creek systems either in dry weather flows, during construction, or by rainfall. Construction activities also create erosion and cause sediment to be transported off-site by surface water runoff over the construction site. Therefore, water quality depends primarily on the hydrologic characteristics of the drainage basin, the makeup of the soils in the watershed, and sources of pollution in the watershed. The quality of stormwater varies in the County depending on climatic and land use conditions. Urban and industrial runoff generally contains more pollutants than rural runoff.

San Luis Obispo County Impaired Water Bodies. Section 303(d) of the federal Clean Water Act requires states to identify waters that do not meet water quality standards after applying effluent limits for point sources (other than publicly owned treatment works) that are based on the best practicable control technology currently available. States are then required to prioritize waters/watersheds for total maximum daily loads (TMDL) development. A TMDL is a written plan that describes how an impaired water body will meet water quality standards. It contains the following:

- A measurable feature to describe attainment of the water quality standards;
- A description of required actions to remove the impairment; and



- An allocation of responsibility among dischargers to act in the form of actions or water quality conditions for which each discharger is responsible.

The Clean Water Act requires that states develop rankings for TMDLs. California ranks TMDLs as high, medium or low priority based on a number of factors including the severity of the impairments and the importance of the specific beneficial uses identified for that water body. Regional Boards develop schedules that set the order for TMDL completion.

States are to compile this information in a list and submit the list to USEPA for review and approval. This list is known as the 303(d) list of impaired waters. The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB) monitor and assess water quality to prepare the Section 303(d) list and to develop TMDLs (RWQCB, 2004). Surface waters of the County that are on the 303(d) list for specific constituents are shown in Table 4.5-1. Special precautions such as Stormwater Pollution Prevention Plans (SWPPP) and construction site Best Management Practices (BMPs) must be implemented where drainage and stormwater runoff impacts any of these County surface water bodies.

Table 4.5-1 San Luis Obispo County 303(d) List of Impaired Waters

Waterway	Constituent/ Pollutant	Potential Sources	Proposed TMDL Completion
Alamo Creek	Fecal Coliform	Agricultural, Natural Sources, Range Grazing – Riparian and/or Upland	2008
Atascadero Creek	Fecal Coliform	Source Unknown	2019
	Low Dissolved Oxygen	Source Unknown	2019
Cholame Creek	Boron	Source Unknown	2019
	Fecal Coliform	Agriculture, Natural Sources, Nonpoint Source, Pasture Grazing – Riparian and/or Upland	2019
Chorro Creek	Nutrients	Agriculture, Agriculture storm runoff, Irrigated Crop Production, Municipal Point Sources	2005
	Oxygen, Dissolved	Source Unknown	2019
Las Tablas Creek	Metals	Surface Mining	2019
Los Osos Creek	Low Dissolved Oxygen	Agriculture, Natural Sources, Pasture Grazing – Riparian and/or Upland, Urban Runoff/Storm Sewers	2015
Morro Bay	Oxygen, Dissolved	Source Unknown	2019
Nacimiento Reservoir	Metals	Surface Mining, Natural Sources	2019
Nipomo Creek	Fecal Coliform	Agriculture, Urban Runoff/Storm Sewers, Natural Sources	2008
Oso Flaco Creek	Ammonia (Unionized)	Source Unknown	2019
	Fecal Coliform	Source Unknown	2008
	Nitrate	Source Unknown	2015
Oso Flaco Lake	Dieldrin	Source Unknown	2019
	Nitrate	Agriculture, Nonpoint Source	2015
Salinas River (upper, confluence of Nacimiento River to Santa Margarita Reservoir)	Chloride	Agriculture, Pasture Grazing-Riparian and/or Upland, Urban Runoff/Storm Sewers	2019
	Sodium	Agriculture, Pasture Grazing-Riparian and/or Upland Urban Runoff/Storm Sewers	2019
San Luis Obispo Creek	Nitrate as Nitrate (NO3)	Source Unknown	2019



Table 4.5-1 San Luis Obispo County 303(d) List of Impaired Waters

Waterway	Constituent/ Pollutant	Potential Sources	Proposed TMDL Completion
	Nutrients	Municipal Point Sources, Agriculture, Irrigated Crop Production, Agriculture-storm runoff	2005
Santa Maria River	Ammonia (Unionized)	Source Unknown	2019
	Chlorpyrifos	Source Unknown	2015
	DDT	Source Unknown	2015
	Dieldrin	Source Unknown	2015
	Endrin	Source Unknown	2015
	Fecal Coliform	Agriculture, Pasture Grazing-Riparian and/or Upland, Urban Runoff/Storm Sewers, Natural Sources	2008
	Nitrate	Agriculture, Pasture Grazing-Riparian and/or Upland, Urban Runoff/Storm Sewers	2015

Source: Regional Water Quality Control Board 303(d) list, 2006. Board Approved List.
http://www.swrcb.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/swrcb/r3_final303dlist.pdf

Beneficial Use. Streams, lakes, rivers, and other water bodies have uses to humans and other life. These uses, or “beneficial uses,” are outlined in a Water Quality Control Plan, also called the Basin Plan of the Central Coast Region. There are 24 categories of beneficial uses, including but not limited to water contact recreation, non-water contact recreation, municipal water supply, and cold fresh water habitat. Each body of water in the state has a set of beneficial uses it supports that may or may not include all 24. Different beneficial uses require different water quality control. Therefore, each beneficial use has a set of water quality objectives designed to protect that beneficial use. Table 4.5-2 defines beneficial surface water uses typically found in the County.

Table 4.5-2 Definitions of Beneficial Uses for Surface Waters

Abbreviation	Beneficial Use	Definition
MUN	Municipal & Domestic Water Supply	Community, military, or individual water supply systems including, but not limited to, drinking water supply.
AGA	Agricultural Supply	Farming or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for grazing.
GWR	Ground Water Recharge	Natural or artificial recharge of ground water for purpose of future extraction or maintenance of water quality.
REC1	Contact Water Recreation	Recreational activities involving body contact with water, where ingestion of water is reasonably possible. Example: swimming, fishing, and wading.
REC2	Non-Contact Water Recreation	Recreational activities close to water, but not normally involving body contact with water. Example: picnicking, hiking, and boating.
WARM	Warm Freshwater Habitat	Warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, and fish or wildlife.
WILD	Wildlife Habitat	Terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, and wildlife.
COLD	Cold Freshwater Habitat	Cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife.
SPWN	Spawning Habitat	High quality habitats suitable for reproduction or early life stages of fish. This use is applicable only for the protection of anadromous fish.



RARE	Rare, Threatened, or Endangered Species	Habitats necessary for the survival of plant and animal species identified under state or federal law as rare, threatened, or endangered.
COMM	Commercial & Sport Fishing	Commercial or recreational collection of fish or other organisms including, but not limited to, uses of the organism for human consumption or bait.

Source: Central Coast Regional Water Quality Control Board, Water Quality Control Plan.

Water Quality Objectives. Water quality objectives are the limits or levels of water quality constituents or the characteristics of a water body that are established for the reasonable protection of beneficial uses of water. Water quality objectives are numeric limits and narrative objectives designed to ensure that bodies of water in the state can support their designated beneficial uses. At concentrations equal to or greater than numeric objectives, constituents (or pollutants) are considered to have impaired the beneficial uses of the state's water. Sometimes, the objectives are narrative, which are qualitative objectives. A narrative objective in the Basin Plan might state, "Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths..." With this narrative objective, the actual numeric limit for the concentration is not articulated. Table 4.5-3 provides water quality objectives for potential releases of pollutants into County surface waters.

Table 4.5-3 Water Quality Objectives for Beneficial Uses of Surface Waters

Beneficial Uses	Constituent	Objective
MUN, AGR, REC-1, REC-2, COLD, WARM	pH	6.5 to 8.3. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters.
MUN	Organic Chemicals	Shall not exceed organic chemical concentrations in excess of the limiting concentrations set forth in the California Code of Regulation, Title 22.
MUN, AGR, WARM	Chemical Constituents	Shall not exceed chemical concentrations in excess of the limiting concentrations set forth in the California Code of Regulations, Title 22 nor contain concentrations known to be deleterious to fish or wildlife.
MUN	Phenol	Water shall not contain phenol in concentrations of 1.0micro grams per liter.
AGR, COLD, WARM, SPWN	Dissolved Oxygen	Dissolved oxygen shall not be reduced to below 7.0 mg/l at any time.
REC-1, REC-2, SHELL	Bacteria	Fecal Coliform concentrations shall not exceed a log mean of 200/100 ml.
COLD, WARM	Temperature	At no time shall the temperature be increases by more than 5 degrees Fahrenheit above natural receiving temperatures.
MUN	Aluminum	Maximum contaminant level 1mg/l
MUN	Arsenic	Maximum contaminant level 0.05 mg/l
MUN	Barium	Maximum contaminant level 1 mg/l
SPWN, MUN	Cadium	Cadium shall not exceed 0.003 mg/l in hard water or 0.0004 mg/l in soft water at any time. (hard water is defined as water exceeding 100mg/l CaCO ₃ .)
SHELL, MUN	Chromium	The maximum value is 0.01mg/l
MUN	Lead	Maximum contaminant level is 0.05mg/l
MUN	Mercury	Maximum contaminant level is 0.002mg/l
MUN	Nitrate (NO ₃)	Maximum contaminant level is 45mg/l
MUN	Selenium	Maximum contaminant level is 0.01mg/l
MUN	Silver	Maximum contaminant level is 0.05mg/l
All	Biological Oxygen Demand (BOD)	Water shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
All	Chemical	Water shall not contain biostimulatory substances in concentrations that



Table 4.5-3 Water Quality Objectives for Beneficial Uses of Surface Waters

	Oxygen Demands (COD)	promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
All	Total Dissolved Solids (TDS)	Dischargers of waters or wastewater shall not increase the TDS content of receiving waters unless it can be demonstrated to the RWQCB that an increase in TDS does not adversely impact beneficial uses.
All	Total Suspended Solids (TSS)	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affects beneficial uses.
All	Turbidity	Waters shall be free of change in turbidity that cause nuisance or adversely affect the beneficial uses.

Source: Central Coast Regional Water Quality Control Board, *Water Quality Control Plan*.

e. Regulatory Setting. Surface water and groundwater resources and their associated water quality are regulated in California through many different applicable laws, regulations and ordinances administered by local, state and federal agencies. The U.S. Army Corps of Engineers, San Luis Obispo County Flood Control District, California Department of Water Resources, and Central Coast RWQCB are the primary agencies responsible for the protection of watersheds, floodplains, and water quality. These agencies ensure that the hydrologic characteristics of surface water and groundwater are considered, so that the existing identified beneficial uses are not impaired. Similarly, water quality regulations are designed to limit the discharge of pollutants to the environment, maintain surface water and groundwater quality, protect fish and wildlife and their habitats, and protect beneficial uses.

Federal and State Policies and Regulations. Federal and State agencies have jurisdiction over specific activities conducted in or connected to drainages, stream channels, wetlands and other water bodies. The federal government supports a policy of minimizing “the destruction, loss or degradation of wetlands” (Executive Order 11990, May 24, 1977). The U.S. Army Corps of Engineers (ACOE) and the U.S. Environmental Protection Agency (EPA) regulate the placement of dredged and fill material into “Waters of the United States,” including wetlands, under section 404 of the Clean Water Act (CWA). Un-vegetated stream channels, mud flats, and open water such as ponds and lakes are not considered wetlands but do fall under the ACOE and EPA jurisdiction under Section 404 of the CWA as “other waters of the United States.” The jurisdictional limits of stream channels and lakes are delineated, in the absence of adjacent wetlands, at the average high-water mark. For all work subject to a 404 permit, project proponents must obtain either a certification or a waiver from the RWQCB stating that the project would comply with applicable water quality regulations. In addition to the CWA permits, a Fish and Game 1602 Streambed Alteration Permit may also be required depending on the specific activity.

The State Department of Water Resources is responsible for coordinating flood prevention activities and is authorized to receive requests from public agencies for assistance during floods. Should flooding occur, these agencies would have policies and regulations with respect to how flooding hazards would need to be managed. The Federal Emergency Management Agency (FEMA) establishes base flood heights for 100-year and 500-year flood zones.

Since 1990, regulations have increasingly emphasized the control of water pollution from non-point sources, which include stormwater systems and runoff from point-source construction sites and industrial areas. In California, the State Water Resources Control Board (SWRCB)



issued a statewide General Permit to regulate runoff from construction sites involving grading and earth moving in areas over one acre and projects less than one acre that are part of a common development. The SWRCB is acting to enforce requirements of the federal Clean Water Act, pursuant to regulations issued by the U.S. EPA for the National Pollutant Discharge Elimination System. This State Order (Water Quality Order 99-08-DWQ) requires construction projects covered under the General Permit to use the “best available technology economically achievable,” and the “best conventional pollution control technology.” Each construction project subject to the permit is required to have a Stormwater Pollution Prevention Plan (SWPPP) prepared, which identifies likely sources of sediment and pollution and incorporates measures to minimize sediment and pollution in runoff water. These objectives are established based on the designated beneficial uses (e.g. water supply, recreation, and habitat) for a particular surface water or groundwater.

Under Phase Two of the National Pollutant Discharge Elimination System (NPDES), the County was required to seek coverage under the SWRCB’s General Permit for Municipal Separate Storm Sewer Systems (MS4s). In order to gain coverage under this permit, the County was required to produce a Stormwater Management Program (SWMP). The SWMP outlines various practices that the County will implement over a five-year time span in order to reduce discharges into the stormwater conveyance system. A more thorough description of the County’s SWMP is provided in Section 2.4, *Background for Proposed Grading and Stormwater Management Ordinances*.

Existing Local Policies and Regulations. Chapter 22.52 (Inland) and Chapter 23.05 (Coastal) contain site development standards for County projects, including drainage, grading, erosion, and sedimentation control. The existing sections that are applicable to drainage, grading, erosion, and sedimentation are outlined below. These ordinance sections are subject to revisions, amendments, and additional requirements associated with the proposed ordinance revisions.

Grading projects requiring land use approval are required to submit grading plans in accordance with Chapter 22.52 of the Land Use Ordinance and Sections 23.05.020 et seq. of the Coastal Zone Land Use Ordinance (hereafter “grading ordinances”). Engineered grading plans are required for projects involving disturbance of 5,000 or more cubic yards of material, located on twenty percent slopes or greater, or located in a designated Geologic Study Area or Flood Hazard combining designation. Projects sites where development will occur within the 100-year flood zone must have specific design considerations to ensure the structure is adequately protected, as defined in Section 22.14.60 (Inland) and Section 23.07.066 (Coastal).

Grading must follow the standards provided in the 1997 Uniform Building Code (Appendix Chapter 33) and the following standards:

- Areas of cut and fill are to be limited to the minimal amount necessary.
- Grading for a building site is prohibited on slopes of 30% or greater (Coastal).
- Contours are to be blended with the natural terrain.
- Grading may not alter watercourses except as permitted through the Department of Fish and Game and various watercourse protection methods shall be followed.
- Areas where natural vegetation has been removed must be replanted by various approved methods.



The existing grading ordinances include provisions for the preparation of a drainage plan. Drainage plan design and construction standards function to minimize harmful effects of stormwater runoff and resulting inundation and erosion on proposed projects, and to protect neighboring and downstream properties from drainage problems resulting from new development. Applicants for building permits are required by this ordinance to develop a drainage plan for their project unless site and project characteristics are such that drainage impacts would be negligible. When required, the drainage plan is to include finished contours of the project, the location and design of any proposed facilities for storage or conveyance of runoff into drainage channels, including sumps, basins, channels, culverts, ponds, storm drains, and drop inlets, estimates of existing and increased runoff resulting from the proposed improvements, identification of existing and proposed drainage channels, facilities for storage or conveyance of runoff, erosion and sedimentation control measures, and proposed flood-proofing measures.

The existing grading ordinances require submittal of a drainage plan for projects that:

- Increase or decrease runoff volume or velocity leaving the site beyond those that existed prior to site disturbance;
- Involve land disturbance of more than 20,000 square feet;
- Will result in an impervious surface of more than 20,000 square feet;
- Is subject to local ponding due to soil or topographic conditions;
- Is located in an area with a history of flooding or erosion that may be further aggravated by or have a harmful effect on the projector adjoining properties;
- Is located within a Flood Hazard combining designation;
- Is located over a known high recharge area;
- Involves land disturbance or placement of structures within 100 feet of the top bank on any watercourse shown with a blue line; or
- Involves hillside development on slopes steeper than 10 percent.

Erosion and sedimentation control to protect damaging effects on-site and on adjoining properties is also discussed in the existing grading ordinances. An erosion and sedimentation control plan is required for most development. The plan must discuss temporary and final measures including:

- Slope surface stabilization including temporary mulching or other stabilization measures to protect exposed areas of high erosion potential during construction and interceptors and diversions at the top of slopes to redirect runoff;
- Erosion and sedimentation control devices such as absorbing structures or devices to reduce the velocity of runoff;
- Final long-term erosion control measures including mechanical or vegetative measures.

The existing grading ordinances require submittal of an Erosion and Sedimentation Control plan unless all of the following site characteristics exist:

- Site has a maximum slope less than 10 percent in the area to be graded;
- Site is not located within geologically unstable areas;



- Site is located on soils rated as having a low erosion hazard by the National Resource Conservation Service;
- Site is located more than 300 feet from the top bank of any blue line watercourse or water feature;
- The grading will not cause organic or earthen materials from logging, construction or other land disturbance activities to be carried into a swale, drainage way, watercourse, or onto adjacent properties by rainfall or runoff; and
- All grading activities and site disturbance activities will occur after April 15 and before October 15 and will create minimal site disturbance from combined activities.

In addition to the requirements above, several specific areas of the County require submittal of a drainage plan due to soil conditions, existing problems, and general area concerns. Areas requiring drainage plan submittal regardless of site conditions include: most of Los Osos, Palo Mesa, Cambria, and most of Nipomo. Other areas of concern that often require the submittal of a drainage plan include the Arroyo Grande fringe where existing ditches built by the Works Progress Administration often require cleaning of sediment and debris; Cayucos/Morro Strand adjacent to the coast; Cabrillo Estates in Los Osos, which is sited on an active sand dune with several areas of steep slopes; and areas below the 825 foot flood elevation at Lake Nacimiento. Drainage, Erosion, and Sedimentation Control plans may also be required in other areas following review of site conditions during the environmental review of a project.

4.5.2 Impact Analysis

a. Methodology and Significance Thresholds. An impact would occur if development resulting from the Grading and Stormwater Management Ordinances occurred in areas with existing drainage concerns. Potential impacts would be assessed based on site topography, the proposed layout and elevations of potential project components, the erodibility of soils, and the regulatory framework necessary for the project.

With respect to water quality, determining significance is more indirect because there are no specific discharge requirements or standards for stormwater runoff that can be compared at this time. For the purposes of this EIR, the determination of significance is based on a review of typical construction site pollutants usually found on job sites that might contribute to disproportionate amounts of polluting materials in runoff. The State Water Resources Control Board (SWRCB) has not attempted to identify numerical limits to be achieved in runoff from construction sites. Instead, the General Order contains narrative restrictions referencing best available technology economically achievable and the best conventional pollution control technology. Thus, the significance of water quality impacts will be judged in terms of conformance with these requirements.

In accordance with Appendix G of the *State CEQA Guidelines*, impacts would be considered significant if development under the Grading and Stormwater Management Ordinances would result in the any of the following:

- *Violate Regional Water Quality Control Board water quality standards or waste discharge requirements;*
- *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local*



- groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);*
- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;*
 - *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;*
 - *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;*
 - *Otherwise substantially degrade water quality;*
 - *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;*
 - *Place within a 100-year flood hazard area structures which would impede or redirect flood flows;*
 - *Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or*
 - *Inundation by seiche, tsunami, or mudflow.*

Additionally, County-established thresholds for significant indicate that a significant impact would occur if development under the proposed ordinances would result in any of the following:

- *Result in soil erosion, topographic changes, loss of topsoil or unstable soil conditions from project-related improvements, such as vegetation removal, grading, excavation, or fill;*
- *Change rates of soil absorption, or amount or direction of surface runoff;*
- *Change the drainage patterns where substantial on- or off-site sedimentation/ erosion or flooding may occur;*
- *Involve activities within the 100-year flood zone;*
- *Violate any water quality standards;*
- *Discharge into surface waters or otherwise alter surface water quality (e.g., turbidity, temperature, dissolved oxygen, etc.); or*
- *Change the quality of groundwater (e.g., saltwater intrusion, nitrogen-loading, etc.).*

b. Project Impacts and Mitigation Measures.

Impact HWQ-1 **The proposed Grading and Stormwater Management Ordinances would implement specific practices identified in the Stormwater Management Plan. The proposed ordinance would strengthen requirements pertaining to erosion and sedimentation control, drainage, and stormwater management. This would have the effect of reducing discharges from construction sites and post-construction discharges. This is a Class IV, beneficial, impact.**

The purpose of the proposed Grading and Stormwater Management Ordinances is to implement measures from the County's Stormwater Management Program (SWMP). These measures are designed to reduce or eliminate construction phase discharges and post



construction discharges into the County's stormwater conveyance system. Implementation of these measures would be expected to improve overall water quality of surface waters.

The proposed Grading and Stormwater Management Ordinances implements both construction phase and post-construction measures. Construction phase measures will require that projects involving ground disturbance of one or more acres prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and apply to the State Water Resources Control Board (SWRCB) for coverage under the General Construction Permit. The SWPPP will identify appropriate Best Management Practices (BMPs) for the site. Additionally, the SWPPP will require that BMPs be routinely inspected and monitored for functionality.

Post-construction measures will apply to uses which have the potential to result in discharges of pollutants to the stormwater conveyance system as a result of their operation. These uses include restaurants, automobile service stations, parking lots, commercial developments, subdivisions, and single-family residences on sloping terrain. These projects will be required to incorporate design standards into their plans in order to avoid discharge of such pollutants as oil, grease, petroleum products, and suspended solids. Maintenance will be ensured through recordation of a mitigation agreement.

Because the project-by-project implementation of construction phase and post-construction stormwater management measures will result in an incremental improvement to surface water quality, this impact can be considered beneficial.

Mitigation Measures. No mitigation measures are required.

Significance after Mitigation. The impact will not be significant.

Impact HWQ-2 The proposed Grading and Stormwater Management Ordinances would introduce agricultural exemptions and the alternative review process to the Coastal Zone. This would facilitate potential expansion of agricultural uses. Expansion of agriculture could potentially result in an increase in agricultural runoff, which could impact water resources. Because agricultural grading would be subject to the requirements of the conditional agricultural waiver program, overseen by the Regional Water Quality Control Board, this impact would be considered Class III, *insignificant*.

The proposed Grading and Stormwater Management Ordinances would expand the agricultural exemption program and introduce the alternative review process to the Coastal Zone. By removing impediments to expansion of agricultural uses, it can be reasonably concluded that the project may indeed result in growth of agricultural uses in the Coastal Zone. Grading to accommodate these agricultural uses could result in erosion and sedimentation and an increase in agricultural water runoff. As such, an impact to water quality could occur.



Agricultural exempt grading can only occur when the applicant has employed appropriate erosion and sedimentation control measures and has adopted recognized agricultural practices. Agricultural grading that results in erosion and sedimentation is, by nature, not exempt and is conducted in violation of the ordinance. To ensure that agriculturalists are aware of their requirements under the exemption program, a form will be required to be filled out and filed with the Department of Planning and Building before initiating work. Acknowledgement of exemption criteria will be required.

Grading occurring under the alternative review process will be subject to direct review and oversight by the Natural Resources Conservation Service (NRCS) or a Resource Conservation District (RCD). Both agencies have staff trained in agricultural practices and soil erosion management. These agencies are well suited to provide direction and recommendations to the applicant to avoid any erosion and sedimentation impacts. Because exempt or alternative-reviewed agricultural grading can only occur when appropriate erosion and sedimentation control measures have been implemented, impacts associated with erosion and sedimentation are expected to be negligible.

The Coastal Zone Land Use Ordinance (CZLUO) establishes restrictions for development in Environmentally Sensitive Habitat Areas (ESHAs). ESHAs include most streams and watercourses in the Coastal Zone. Under the CZLUO, grading and other site work may not occur within ESHAs. Under certain circumstances, site work in or near ESHAs may be authorized through the land use permit process. The proposed Grading and Stormwater Management Ordinances will not modify the thresholds for land use permit approval and will not affect standards for development in and near ESHAs. As such, this creates something of a limiting factor for the expansion of agricultural uses.

Expansion of agricultural uses could result in an increase in agricultural runoff. Such runoff could contain contaminants commonly associated with agricultural use. This could have the potential to impair surface water quality, and would be of particular concern for projects in the watershed of a Section 303(d) impaired water body. However, all projects involving more than one acre of disturbance or with the potential to discharge pollutants to an impaired water body must apply for coverage under the State Water Resources Control Board's (SWRCB's) General Construction Permit. This will necessitate the preparation of a Stormwater Pollution Prevention Plan (SWPPP). Waiver of the General Construction Permit requirement is available to agriculturalists under specific conditions. These conditions are designed to ensure that potential discharges of pollutants into the stormwater conveyance system are minimized to a level of insignificance. An example of conditions to the agricultural waiver include, but are not limited to, the following:

- Agriculturalists must collaborate with NRCS, RCDs, and other agencies on developing BMPs.
- BMPs must be implemented to minimize or eliminate pollutant discharges.
- Agriculturalists must attend 2 hours of water quality management training on an annual basis.
- Agriculturalists must form or join a monitoring group to monitor BMPs.
- Agriculturalists must keep BMP records.



The proposed Grading and Stormwater Management Ordinances will establish the SWPPP requirement locally. An exemption from SWPPP preparation will be granted if an applicant obtains waiver or conditional waiver from the Regional Water Quality Control Board (RWQCB) or SWRCB. Therefore, agriculturalists seeking exemption from the County's SWPPP requirement will also need to comply with the conditional agricultural waiver provisions. Implementation of these provisions will ensure that agricultural discharges will have a less-than-significant impact on water quality.

Mitigation Measures. No mitigation measures are required.

Significance after Mitigation. The impact will not be significant.

Impact HWQ-3 The proposed Grading and Stormwater Management Ordinances would modify development standards for certain types of projects. These standards may affect the amount of impervious surfacing. An increase in impervious surfacing could affect the direction, velocity, and volume of drainage. This would be considered a Class III, *insignificant*, impact.

Post-construction Best Management Practices (BMPs) will be required under the proposed Grading and Stormwater Management Ordinances. These BMPs will reflect the requirements under Attachment 4 of the State Water Resource Control Board's (SWRCB's) General Permit for Municipal Separate Storm Sewer Systems (MS4s). In some cases, these requirements could affect drainage by requiring introduction of impervious surfaces or roofed areas, where these would otherwise not have been required. Examples of this include, but are not limited to, the following:

- Loading dock areas, vehicle/equipment wash areas, fuel dispensing facilities, and trash enclosures are required to be covered in order to avoid stormwater from passing through these areas.
- Vehicle/equipment wash areas, fuel dispensing areas, and outdoor material storage areas are required to be paved.

The affect on drainage from the post-construction stormwater requirements will not be significant, because of additional provisions and requirements. For example, these measures also encourage limitations on impervious surfaces, retention of natural habitats and creek corridors, and implementation of Low Impact Development (LID) practices. Additionally, all projects subject to the post-construction requirements will also be required to prepare a drainage plan for review and approval. The drainage plan will need to address any changes to drainage characteristics resulting from the project. Consideration will also need to be made for drainage conveyed by directly connected impervious areas (DCIAs). Drainage plans will not be approved if their implementation would result in a significant change in velocity, direction, or volume of flow. With the incorporation of these procedures, which are part of the project proposal, impacts resulting from changes in drainage patterns will be less than significant.

Mitigation Measures. No mitigation measures are required.



Significance after Mitigation. The impact will not be significant.

c. **Cumulative Impacts.** Development designed in compliance with the proposed Grading and Stormwater Management Ordinances and from expansion of agricultural uses in the Coastal Zone, could result in changes in drainage patterns and discharges of agricultural-related pollutants. However, proposed and existing ordinance standards would require additional measures be included to address each project's individual impact. As a result, the cumulative impact resulting from the proposed ordinance would not be expected to be cumulatively significant.

